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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/901,317

07/09/2001

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2000-0280-CON

9040

7590

11/20/2006

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EXAMINER

JEAN GILLES, JUDE

ART UNIT

PAPER NUMBER

2143

DATE MAILED: 11/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/901,317

Applicant(s)

BILIRIS ET AL.

Examiner

Jude J. Jean-Gilles

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3,4,6-18,20,22 and 24-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3,4,6-18,20,22 and 24-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Action is in regards to the Reply received on 08/18/2006. Claims Priority is granted from Provisional Application 60203546 with a priority filing date of 05/12/00.

Response to Amendment

1. This action is responsive to Reply submitted on 08/18/2006. Claim 24 have been amended, and claims 3, 4, 6-18, 20, 22 and 24-28 remain pending, and represent a "Method and apparatus for content distribution network brokering and peering."

Response to Arguments

2. Applicant's arguments with respect to claims 3, 4, 6-18, 20, 22 and 24-28 have been carefully considered, but are not deemed fully persuasive. Applicant's arguments are deemed moot in view of the following new ground of rejection as explained here below necessitated by applicants' arguments/amendment to the previous Office action

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 3, 4, 6-18, 20, 22, and 24-28 remain pending are rejected under 35 U.S.C. 103(a) as being unpatentable over Joffe et al (Joffe) U.S. patent No. 6,518,619, in view of Narendran et al (Narendran) U.S. 6,070,191.

Regarding claim 3: Joffe teaches the invention substantially as claimed. Joffe teaches a method of serving content in a packet-switched network comprising:

choosing from a plurality of content distribution networks which content distribution network will respond to a content request from a client (*column 10, lines 48-67; column 11, lines 24-42*);

redirecting the client to the chosen content distribution network so that the content request will be served by the chosen content distribution network (*column 11, lines 24-42; column 13, lines 31-46*), wherein

"one of the plurality of content distribution networks is chosen only if a measured load of the one of the plurality of content distribution networks does not exceed a predetermined capacity reserved on the one of the plurality of content distribution networks". The Examiner in the previous Office action acknowledged that Joffe does not disclose the details of the claim and that the patent of Applicants contend that Joffe does disclose the details of this step and that Grove et al (Grove) U.S. 6,820,133 B1 further teaches the limitation. In the reply dated 08/18/2006, applicants submit that Grove does not disclose "...a content distribution networks that does not exceed a predetermined capacity reserved on the one of the plurality of content distribution networks".

In the same field of Endeavor, Narendran teaches "...Thus, the documents are distributed such that the load on each server is proportional to its capacity in terms of the maximum number of HTTP connections that it can support simultaneously..."[see Narendran; column 5, lines 30-46] and further discloses "...Unlike the previous two examples, in this case the solution is able to achieve only "approximate" load balance. The flow from server S.sub.3 to the sink, which specifies the load on S.sub.3, is 0.61, which is 0.14 less than its capacity. This load has been diverted to S.sub.1 as extra load as shown on the redundant arc between S.sub.1 and the sink. Thus, the load on S.sub.1 is now 0.34..."[see Narendran; column 14, lines 20-48].

Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Narendra's teachings of choosing a Content Distribution only if a measured load of the one of the plurality of content distribution networks does not exceed a predetermined capacity reserved with the teachings of Joffe, for the purpose of increasing tolerance of faults occurring in the underlying hardware and reliability over prior art web servers as stated by Joffe in lines 4-9 of column 4. Narendra also provides motivation to combine by stating that these techniques ensure that the load is properly balanced across the documents servers and that ..." in lines 7-11 of column 3. By this rationale, **claim 3** is rejected.

Regarding claim 4: the combination Joffe-Narendra teaches the method of claim 3 wherein the content distribution network is chosen based, at least partly,

determination of which of the plurality of the content distribution networks is close to the client (see Narendra, column 2, lines 40-53).

Regarding claim 6: the combination Joffe-Narendra teaches the method of claim 3, wherein the content to be served by the chosen content distribution network comprises content embedded in a document to be served to the client, and wherein redirecting the client to the chosen content distribution network further comprises rewriting references to the embedded content before serving the document to the client [see Joffe, column 13, lines 1-46].

Regarding claim 7: The combination Joffe-Narendra teaches the method of claim 6 wherein the reference to the embedded content is rewritten to point to a server in the chosen content distribution network [see Joffe, column 13, lines 1-46].

Regarding claim 8: The combination Joffe-Narendra teaches the method of claim 6 wherein the reference to the embedded content is rewritten to point to a domain name served by the content distribution network [see Joffe, column 10, lines 47-65].

Regarding claim 9: The combination Joffe-Narendra teaches teach the method of claim 6 wherein the reference to the embedded content is rewritten so that an original reference may be readily parsed from a corresponding one of the rewritten reference (see Joffe; column 2, lines 13-35).

Regarding claim 10: The combination Joffe-Narendra teaches the method of claim 9 wherein the chosen content distribution network utilizes the corresponding one of the rewritten references to obtain the embedded content if the chosen content

distribution network does not have an up-to-date copy of the embedded content in a cache (see Narendra; *column 4, lines 16-40*).

Regarding claim 11: The combination Joffe-Narendra teaches the method of claim 3 wherein the step of redirecting the client to the chosen content distribution network further comprises resolving domain name system queries resolve to content served by the chosen content distribution network [see *Joffe, column 10, lines 47-65*].

Regarding claim 12 The combination Joffe-Narendra teaches the method of claim 11 further comprising answering the domain name system queries are answered with a network address of content served by the chosen content distribution network (see *Joffe; column 2, lines 13-35*).

Regarding claim 13: The combination Joffe-Narendra teaches the method of claim 11 comprising answering the domain name system queries with a network address of a domain name system server responsible for the chosen content distribution network [see *Joffe, column 10, lines 47-65*].

Regarding claim 14: The combination Joffe-Narendra teaches the method of claim 11 comprising answering the domain name system queries are answered with a domain name of content served by the chosen content distribution network (see Narendra; *column 4, lines 1-15*).

Regarding claim 15: The combination Joffe-Narendra teaches the method of claim 11 comprising forwarding the domain name system queries to a domain name server responsible for the chosen content distribution network and which directly answers the domain name system queries (see Narendra; *column 4, lines 1-15*).

Regarding claim 16: The combination Joffe-Narendra teaches the method of claim 3 wherein the content distribution network serves the content request from a local cache and wherein the content distribution network has access to a second copy of the content if there is a cache miss (see Narendra; *column 4, lines 17-40*).

Regarding claim 17: The combination Joffe-Narendra teaches the content distribution method of claim 16 wherein the content distribution network includes a table of associations between references to content served by the content distribution network and references to a second copy of the content served from elsewhere in the network [see Joffe, *column 13, lines 1-46*].

Regarding claim 18: The combination Joffe-Narendra teaches the method of claim 16 wherein the content distribution network can transform references to content served by the content distribution network into second references to a second copy of the content served from elsewhere in the network ((see Narendra; *column 4, lines 16-40*).

Regarding claim 20: The combination Joffe-Narendra teaches the brokering domain name server of claim 22 wherein the predetermined policy reflects a chosen content distribution network and redirection mechanism for each of a plurality of regions of client network addresses (see Narendra; *fig. 3*).

Regarding claim 22: The combination Joffe-Narendra teaches a brokering domain server comprising:

a domain name system engine which is capable of answering domain name system queries from a client [see *Joffe*, column 10, lines 47-65]; and

a policy module which directs the domain name system engine to answer the domain name system queries in accordance with a predetermined policy which resolves a domain name to a-server in a content distribution network chosen from a plurality of content distribution networks [see *Narendra*; *fig. 3*; column 5, lines 30-46; column 14, lines 20-48; column 1, lines 14-67] wherein:

the policy module further comprises an interface to information received from the plurality of content distribution networks and wherein the policy module modifies the predetermined policy in response to the information [see *Narendra*; *fig. 3*; column 5, lines 30-46; column 14, lines 20-48; column 1, lines 14-67]

the information further comprises load information and wherein the predetermined policy reflects capacity reserved on each of the plurality of content distribution networks (see *Joffe*; column 5, lines 45-59).

Regarding claim 24: The combination *Joffe-Narendra* teaches a method of redirecting content requests between content distribution networks (*column 5, lines 38-44*), comprising :

receiving a request for a document which contains one or more embedded content references [see *Joffe*, column 13, lines 1-46];

retrieving the document[see *Joffe*, column 13, lines 1-46];

choosing one of a plurality of content distribution networks to serve the embedded content ; the one of the plurality of content distribution networks bein~

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chosen only if a measured load of the one of the plurality of content distribution networks does not exceed a predetermined capacity reserved on the one of the plurality of content distribution networks [see Narendra; *fig. 3*; column 5, lines 30-46; column 14, lines 20-48];

rewriting the document so that the embedded content references point to content stored at the chosen content distribution network [see Narendra; *fig. 3*; column 5, lines 30-46; column 14, lines 20-48; column 3, lines 1-23] and

transmitting the rewritten document (see Joffe; *column 3, lines 22-25*).

Regarding claim 25: The combination Joffe-Narendra teaches a system comprising:

means for choosing a content distribution network from a plurality of content distribution networks for responding to a content request from a clients[see Joffe, *column 13, lines 1-46*]; and

means for redirecting the client to the chosen content distribution network so that the content request will be served by the chosen content distribution network (see Joffe; *column 13, lines 31-46*),

wherein

the means for choosing a content. distribution network from a plurality of content distribution networks for responding to a content request from a client is configured to choose a content distribution network only if a measured load of the

content distribution network does not exceed a predetermined capacity reserved on the content distribution network [see Narendra; *fig. 3*; column 5, lines 30-46; column 14, lines 20-48; column 3, lines 1-23]

Regarding claim 26: The combination Joffe-Narendra teaches the system of claim 25. wherein:

the content to be served by the chosen distribution network comprises content embedded in a document to be served to the clients [see *Joffe*, column 13, lines 1-46]; and

the means for redirecting the client to the chosen content distribution network so that the content request will be served by the chosen content distribution network (see *Joffe*; column 13, lines 31-46), further comprises:

means for rewriting references to the embedded content before serving the document to the client see Narendra; *fig. 3*; column 5, lines 30-46; column 14, lines 20-48; column 3, lines 1-23].

Regarding claim 27: The combination Joffe-Narendra teaches the system of claim 25, further comprising:

means for serving content from a local cache (see *Grove*; column 24, lines 37-67; see *Grove*, column 3, lines 9-22; column 12, lines 32-49); and

means for serving content from a second copy of the content when the means for serving content from a local cache experiences a cache miss see Narendra; *fig. 3*; column 5, lines 30-46; column 14, lines 20-48; column 3, lines 1-23].

Regarding claim 28: The combination Joffe-Narendra teaches the system of claim 27, further comprising:

means for transforming references to content served by the content distribution network into second references to the second copy of the content served from elsewhere in the network see Narendra; *fig. 3*; column 5, lines 30-46; column 14, lines 20-48; column 3, lines 1-23]

Response to Arguments

5. Applicant's Request for Reconsideration filed on 08/18/2006 has been carefully considered but is not deemed fully persuasive. However, because there exists the likelihood of future presentation of this argument, the Examiner thinks that it is prudent to address Applicants' main points of contention.

A. The combination Joffe-Grove is silent on some aspect of the invention and Grove is completely silent with respect to any disclosure or suggestion of reserving a predetermined capacity on one of the content distribution networks. Therefore, Grove does not disclose or suggest that one of the plurality of content distribution network is chosen only if a measured load of the one of the plurality of content distribution networks does not exceed a predetermined capacity

reserved on the one of the plurality of content distribution networks, as required by claim to 3.

B. Applicant contends that Joffe-Grove does not disclose a policy module which directs a domain name system engine to answer domain name system queries in accordance with a predetermined policy which resolves a domain name to a server in a content distribution network chosen from a plurality of content distribution networks, wherein the policy module further includes an interface to information received from the plurality of content distribution networks and wherein the policy module modifies the predetermined policy in response to the information, and the information further includes load information and the predetermined policy reflects capacity reserved on each of the plurality of content distribution networks.

6. As to "Point A" it is the position of the Examiner that the new patent of Narendra in combination with Joffe in detail teaches the limitations of the above mentioned claims, and specifically the limitations underlined in point A [see Narendra; *fig. 3*; column 5, lines 30-46; column 14, lines 20-48; column 3, lines 1-23]

As to "Point B", (see rejection of the independent claims above and specifically claim 22; also see Narendra; *fig. 3*; column 5, lines 30-46; column 14, lines 20-48; column 1, lines 14-67]

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Examiner notes with delight that no new matter has been added and that the new claims are supported by the application as filed. However, applicant has failed in presenting claims and drawings that delineate the contours of this invention as compared to the cited prior art. Applicant has failed to clearly point out patentable novelty in view of the state of the art disclosed by the references cited that would overcome the 103(a) rejections applied against the claims, the rejection is therefore sustained.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE NON-FINAL**. The Examiner strongly anticipates a Final Rejection Office Action on the next response if amendments are not properly made to the claims to perhaps place them in condition for allowance.

Any inquiry concerning this communication or earlier communications from examiner should be directed to Jude Jean-Gilles whose telephone number is (571) 272-3914. The examiner can normally be reached on Monday-Thursday and every other Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley, can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3719.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


Jude Jean-Gilles

Patent Examiner

Art Unit 2143

JJG

October 31, 2006



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